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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
KOCH, GEORGE R	

ART UNIT	PAPER NUMBER
1734	

DATE MAILED: 05/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/821,618	ROMINE, MICHAEL J.	
	Examiner	Art Unit	
	George R. Koch III	1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 February 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1,2 4-7, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rutledge et al (US Patent 6,391,387 B1), Tracy (US 6,266,869) and Cavallaro (US 5,795,390).

As to claim 1, Rutledge discloses a liquid dispenser comprising a support member (see Figures 19-22, especially item 630 and related substructures) which moves linearly (see movement axis 632 and 634), and a liquid dispensing head operatively (item 610 and related substructures) connected to said support member and capable of pivoting movement (see axis 614 in Figure 19, around a cradle at axis G-G which is considered to be part of the dispenser) relative to said support member with the capability to move in response to contact of the liquid dispensing head with the substrate, said liquid dispensing head having a liquid flow-path extending there-through terminating in an outlet for dispensing fluid onto the substrate, and a linear displacement sensor (items 668) operatively connected to said support member and said liquid dispensing head, said linear displacement sensor being capable of generating a signal that indicates a sensed displacement of said liquid dispensing head relative to said support member (see column 16, line 60 to column 19, line 36) in response to contact of the liquid dispensing head with the substrate. The placement of the sensor on items

670 and 674 is considered to read on the sensor being operatively connected to the support member and liquid dispensing head (see column 17, line 62 to column 18, line 7).

The embodiment of Rutledge in Figure 19 does not disclose using a linear movement for the liquid dispensing head, nor explicitly discloses floating for the liquid dispensing head. Rutledge discloses pivotal movement. Additionally, the embodiments of allows only one element of the sensor to be moved, as the other element is fixed.

However, Tracy discloses the use of linear glass scale encoders on the movable elements of the X and Y stages for moving the liquid dispensing head (see column 7, especially, lines 27-40). Tracy discloses that such encoders would allow for the arm to be placed at precise positions. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use encoders or sensor elements on the moveable elements of the dispenser in order to achieve accurate positioning.

Cavallaro discloses a floating liquid dispensing head (see column 4, line 55 to column 5, line 6) operatively connected to the support member and configured for floating linear movement relative to the support member along a second axis parallel to the first axis (see column 6, lines 13-42) in response to contact of the liquid dispensing head with the substrate, the liquid dispensing head having a liquid flow-path extending there through terminating in an outlet for dispensing fluid onto the substrate. Cavallaro utilizes such movement members in order to achieve efficient movement of the floating liquid dispensing head. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the additional linear movement axis

which is parallel to the first movement axis in order to achieve multiple dispensing options and improved coating efficiency.

As to claim 2, the linear displacement sensor is a linear encoder (see column 17, lines 59-61, which recites "linear encoder" and see items 674 and 672).

As to claim 4, Rutledge discloses a controller device which is a control mechanism for the apparatus, which is a robot (definition of robot : a device that automatically performs complicated often repetitive tasks or : a mechanism guided by automatic controls - from the Merriam Webster dictionary), and this robot control mechanism functions as claimed.

As to claims 5 and 6, the device of Rutledge is capable of being programmed to perform as claimed.

Claims 7, 9 and 10 are rejected on the same grounds as claims 1, 2, and 4-6 above.

3. Claims 1, 2, 4-7, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cavallarro (US 5,795,390) and in view of Rutledge et al (US Patent 6,391,387 B1) and Tracy (US 6,266,869 B1).

Hynes discloses Cavallaro discloses a floating liquid dispensing head (see column 4, line 55 to column 5, line 6) operatively connected to the support member and configured for floating linear movement relative to the support member along a second axis parallel to the first axis (see column 6, lines 13-42) in response to contact of the liquid dispensing head with the substrate, the liquid dispensing head having a liquid

flow-path extending there through terminating in an outlet for dispensing fluid onto the substrate.

Cavallaro does not disclose a linear displacement sensor operatively connected to said support member and said liquid dispensing head, said linear displacement sensor being capable of generating a signal that indicates a sensed displacement of said liquid dispensing head relative to said support member in response to contact of the liquid dispensing head with the substrate.

Rutledge discloses a conformal coating (i.e., sealant coating structure) with multiple axis of movement and which also discloses a linear displacement sensor (items 668) operatively connected to said support member and said liquid dispensing head, said linear displacement sensor being *capable* of generating a signal that indicates a sensed displacement of said liquid dispensing head relative to said support member in response to contact of the liquid dispensing head with the substrate (see column 16, line 60 to column 19, line 36). The placement of the sensor on items 670 and 674 is considered to read on the sensor being operatively connected to the support member and liquid dispensing head (see column 17, line 62 to column 18, line 7). Rutledge discloses that such a sensor allows for the determination of the position of the bracket to the sensor, and thus, the spray or coating position of the gun (see column 18, lines 29-50, especially). One in the art would immediately recognize that the sensor system provides feedback as to the positioning of the coating structure, and that this would improve coating efficiency. Therefore, it would have been obvious to one of ordinary

skill in the art at the time of the invention to utilize such a linear displacement sensor as claimed in order to improve coating efficiency.

Additionally, the sensor embodiments Rutledge allows only one element of the sensor to be moved, as the other element is fixed.

However, Tracy discloses the use of linear glass scale encoders on the movable elements of the X and Y stages for moving the liquid dispensing head (see column 7, especially, lines 27-40). Tracy discloses that such encoders would allow for the arm to be placed at precise positions. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use encoders or sensor elements on the moveable elements of the dispenser in order to achieve accurate positioning.

As to claim 2, Rutledge as incorporated discloses that the linear displacement sensor is a linear encoder (see column 17, lines 59-61, which recites a "linear encoder" and see items 674 and 672).

As to claim 4, Rutledge as incorporated discloses a controller device which is a control mechanism for the apparatus which is a robot (definition of robot : a device that automatically performs complicated often repetitive tasks or : a mechanism guided by automatic controls - from the Merriam Webster dictionary), that this robot control mechanism is interacting with the linear displacement sensor, and this robot control mechanism functions as claimed. One in the art would ad would immediately appreciate that interaction between the robot control mechanism and linear displacement sensor would improve coating efficiency. Therefore, it would have been obvious to one of

ordinary skill in the art at the time of the invention to utilize such a linear displacement sensor as claimed in order to improve coating efficiency.

As to claims 5 and 6, the device of Rutledge as incorporated into Cavallaro is capable of being programmed to perform as claimed.

Claims 7, 9 and 10 are rejected on the same grounds as claims 1, 2, and 4-6 above.

4. Claims 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rutledge and Cavallaro (as applied to claims 2 and 7 above in section 2) or Cavallaro and Rutledge (as applied to claims 2 and 7 above in section 3) in view of the Anorad Brochure (Installation, Operation, and Maintenance Manual MERS50 Linear Encoder System) cited to show that a characteristic not disclosed in the Rutledge is inherent.

Rutledge discloses using a sensor mechanism and a tape scale as the sensor assembly. Rutledge is silent as to whether the sensor mechanism is optical, but Rutledge further discloses that the preferred sensor mechanism and tape scale is the Model MERSSO-DI sold by the Anorad Corporation.

The Anorad Brochure discloses that the preferred linear encoder (the Anorad MERSSO) is a *optical* sensor and tape scale (see Anorad Linear Motor division, - Installation, Operation and Maintenance Manual MERSSO- Linear Encoder System which describes the MERSSO sensor, especially page 1, first paragraph of section 1.2, which cites "The MERS50 Encoder system is a high precision, position feedback transducer for machinery or other equipment control systems. As a non-contact,

optical, encoder the system comprises a profiled scale strip attached to an appropriate substrate axis, and a scanning readhead."). Thus, Rutledge inherently discloses using an optical sensor mechanism, since the preferred sensor assembly is known to be an optical mechanism.

5. Claims 5, 6, 9 and 10 are alternatively rejected under 35 U.S.C. 103(a) as being unpatentable over Rutledge and Cavallarro as applied to claims 4 and 7 above, or Cavallarro and Rutledge as applied to claim 4 above, and further in view of Ng (US Patent 5,820,623).

As to claims 5, 6, 9 and 10, Rutledge does not explicitly disclose that the control mechanism is responsive to the signal from the linear displacement sensor to either stop movement of said support member, or to provide an alert.

Ng discloses a robotic control mechanism is responsive to the signal from the linear displacement sensor to either stop movement of said support member, or to provide an alert (see especially column 10, lines 39-50). One in the art would appreciate that such responses would prevent damage to either the apparatus or the substrate by preventing improper movements by the apparatus. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have incorporated such a robotic control mechanism with the movement stopping and alerting mechanisms in order to prevent damage to the apparatus and substrate.

Response to Arguments

6. Applicant's arguments filed 2/16/2006 have been fully considered but they are not persuasive.

7. With respect to applicant's argument that Rutledge does not have the "capability to move" (pages 1-2 of the remarks), this argument is not persuasive. This movement is an intended use, and depends on the substrates and movements selected. The tip of Rutledge is considered capable of moving as claimed.

8. In response to applicant's argument that argues that the language "configured for" (see pages 2-3 of the remarks) with respect to the "floating linear movement" is different from "capable of". However, it is unclear why this would be a basis for patentability. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. This argument does not set out any structural differences. Furthermore, applicant never addresses the rationale of the rejection, which utilizes Cavallaro for the floating linear movement (Applicant admits that Cavallaro discloses a floating head liquid dispenser on page 4 of the remarks).

9. With respect to applicant's arguments as to the first and second sensor components, the examiner does not agree with Applicant's position. Tracy discloses a first sensor component supported by and moveable with the support member and a second sensor component supported by and moveable with the liquid dispensing head.

This demonstrates the sensor concept. While Tracy does not disclose the floating head concept, it is not being relied upon for this element.

10. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George R. Koch III whose telephone number is (571) 272-1230 (TDD only). If the applicant cannot make a direct TDD-to-TDD call, the applicant can communicate by calling the Federal Relay Service at 1-866-377-8642 and giving the operator the above TDD number. The examiner can normally be reached on M-F 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

George R. Koch III
Primary Examiner
Art Unit 1734

GRK
4/24/2006